

>PATENTS ABSTRACTS OF JAPAN

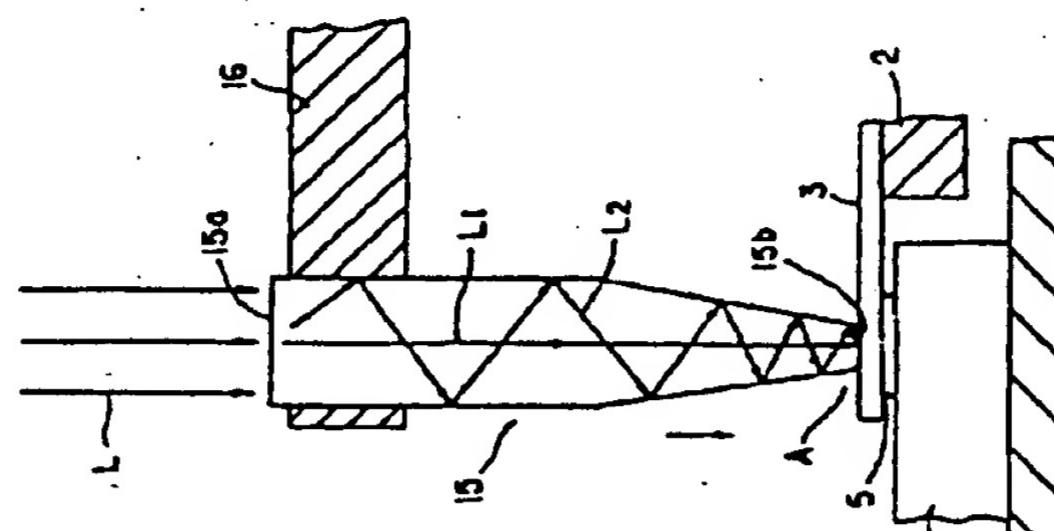
E-1489 January 13, 1994 Vol. 18/No. 20

- (54) BONDING TOOL
 (11) 5-259220 (A) (43) 8.10.1993 (19) JP
 (21) Appl. No. 4-51481 (22) 10.3.1992
 (71) TOSHIBA CORP (72) NORIYASU KASHIMA(1)
 (51) Int. Cl^s. H01L21/60, B23K26/00

E

PURPOSE: To eliminate the loss of laser energy and reduce the joining defect with an easy process, by forming an optical waveguide with a transparent member and providing a surface into which a laser beam is emitted and a surface for pressurizing a bonded member while the laser beam is emitted out.

CONSTITUTION: When a lead 3 is joined to an electrode pad 5, a pressurizing surface 15b of a bonding tool 15 is positioned over the lead 3 and the lead 3 is pressed in the direction of the electrode pad 5. Next, a laser beam L is emitted into an incident surface 15a of the bonding tool 15. A part L₁ of the laser L introduced into the bonding tool 15 travels straight toward the bottom surface 15b, and a part L₂ of the laser beam L reaches the bottom surface 15b while repeating the reflection on the boundary surface between the bonding tool 15 and the outside atmosphere. Then, the lead 3 and the electrode pad 5 are heated by the emitted laser beam L and the application of an ultrasonic vibration. Thus, a heating and a joining are performed by a heat energy, a laser energy and an ultrasonic energy.



3: lead (bonded member). A: joining part

- LEGENDE zu den Biolographiedaten (E4) Titel der Patentanmeldung**
 (11) Nummer der JP-A2 Veröffentlichung (72) Erfinder
 (21) Aktenzeichen der JP-Anmeldung (52) Japanische Patentklassifikation
 (43) Veröffentlichungstag (51) Internationale Patentklassifikation

- (22) Anmeldetag in Japan (71) Anmelder
 (52) Japanische Patentklassifikation
 (51) Internationale Patentklassifikation

D8